

## Using the PE-ECU-1 System with a Honda F2 or F3 600cc Engine

### Crank Position Sensor

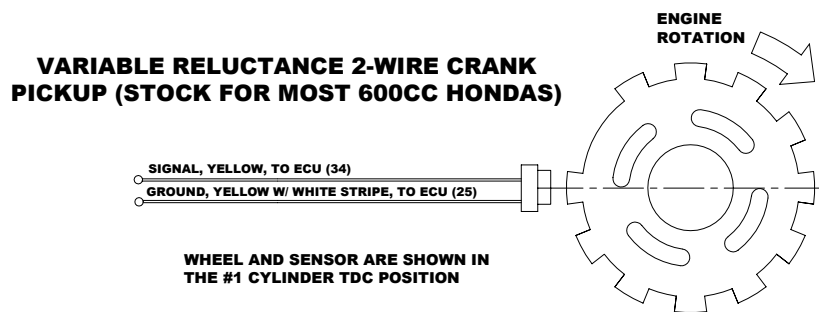
The stock Honda F2 and F3 crank position sensors can be used with the PE-ECU-1 engine control system, provided the engine controller is configured for a 2-wire variable reluctance sensor. The sensor should be wired according to the following:

- Solid Yellow Wire – Pin 34 on ECU
- Yellow with White Stripe (GND) – Pin 25 on ECU

Failure to wire the sensor in this way may result in an engine that misfires and/or has incorrect ignition timing.

### Crank Trigger Wheel

The stock Honda trigger wheel cannot be used with the PE-ECU-1 system due to the differences in the number and spacing of the teeth. The PE-ECU-1 must be provided with a 12-1 pulse-train, correctly phased with TDC #1 according to Figure 1.



**Figure 1 – Correct Trigger Wheel/Sensor Orientation**

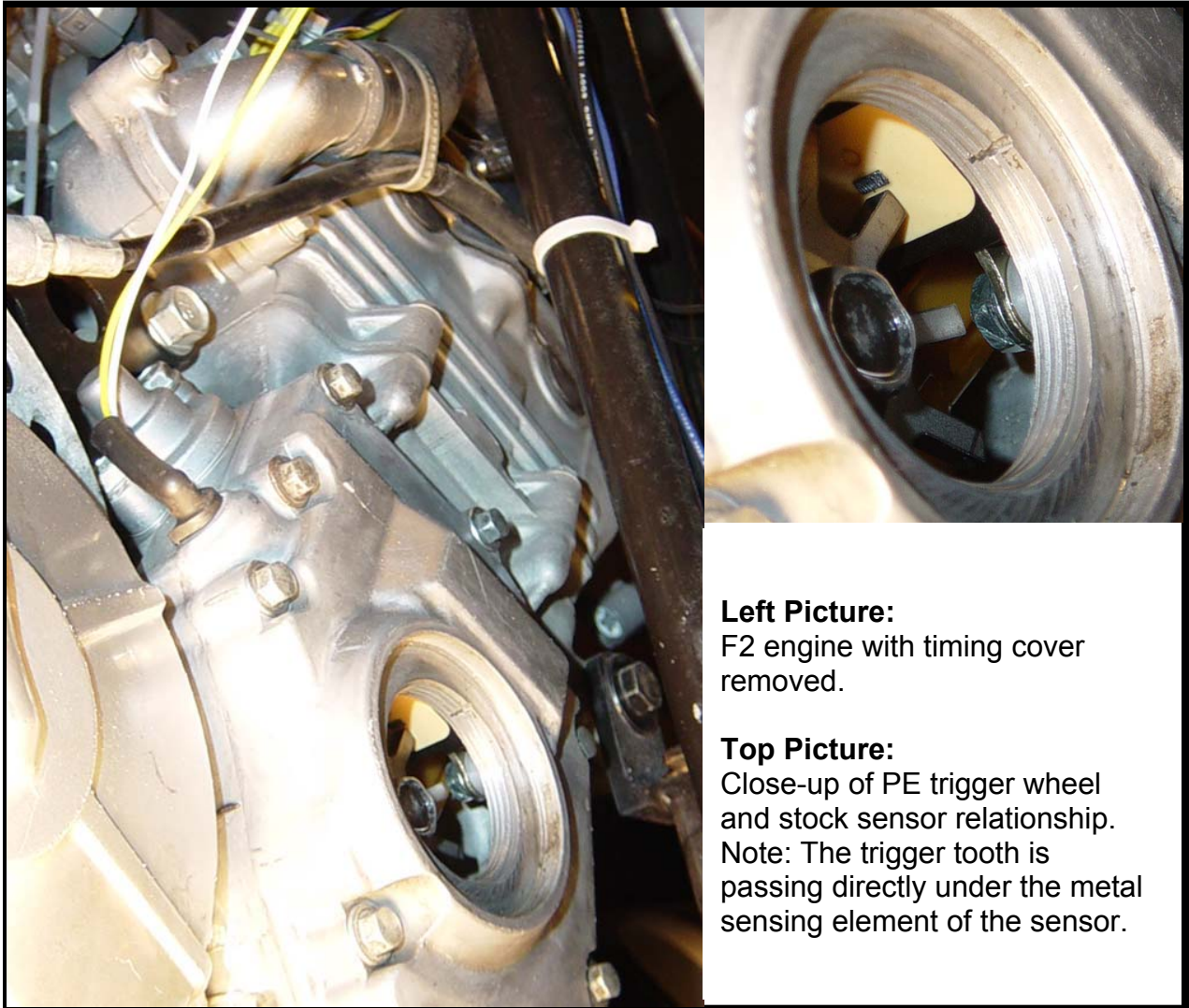
Performance Electronics, Ltd. (PE) can supply one of several different sized trigger wheels for different applications. For most Honda motorcycles, including the F2 and F3, the 2.4" diameter wheel fits nicely under the side cover in place of the stock trigger wheel. Drawings for the trigger wheels can be downloaded from the web site at [www.pe-ltd.com/support.htm](http://www.pe-ltd.com/support.htm).

Some modification to the standard PE wheel, however, is required in order to use in a Honda F2 or F3 engine. Because the stock Honda trigger wheel has a certain amount of offset (Figure 2), the PE wheel must be spaced along the crankshaft accordingly.



**Figure 2 – Stock Honda F2 Trigger Wheel**

It is important that the teeth on the trigger wheel pass directly under the metal portion of the Honda sensor (Figure 3). Whatever method is used to locate the trigger wheel, it is very important to minimize the run-out on the outside diameter of the wheel. Run-out in excess of 0.003" in either the radial or axial direction can cause inconsistencies in the trigger wheel signal. No modification to the outside diameter of the PE trigger wheel is required if the Honda sensor remains in the stock location.



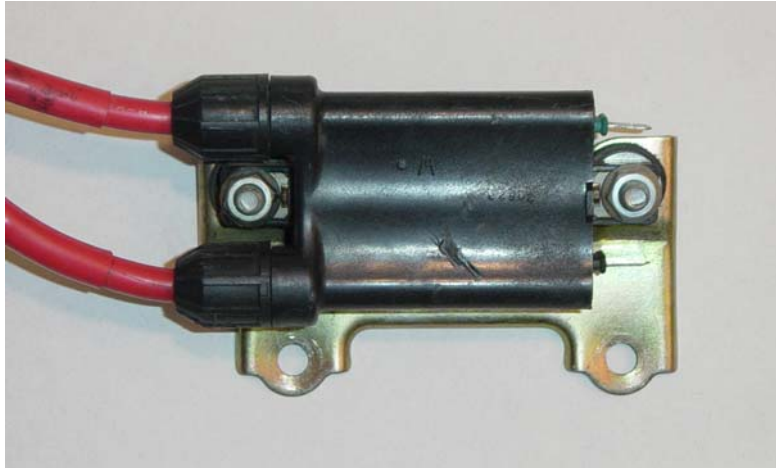
**Left Picture:**  
F2 engine with timing cover removed.

**Top Picture:**  
Close-up of PE trigger wheel and stock sensor relationship. Note: The trigger tooth is passing directly under the metal sensing element of the sensor.

**Figure 3 – Correct Installation of Trigger Wheel and Sensor**

## **Ignition Coils**

The stock wasted spark coils for both the F2 and F3 are compatible with the PE-ECU-1 system (Figure 4). Verify that the resistance of the primary side of the coils is between 2.8 and 3.2 ohms. Please see the User's Manual for specific wiring.



**Figure 4 - Stock F2 Ignition Coil**

### **Coil Charge Time**

The amount of time that the coils charge each revolution can be configured in the “Setup” menu under the “Engine Tab” in the Monitor Program. The stock Honda coils require approximately 4.0 ms to charge almost completely. Set the “Charge Time” parameter to be 4.0 ms for the stock coils.